Missouri Department of Conservation
Duck Seasons and Zoning Workshop

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Missouri Department of Conservation Duck Season and Zoning Workshop

The opportunity for changing duck season zone boundaries and duck season structure (splits and zones) is available to states every five years. The "open season" for change is 2006 and a series of workshops are being conducted during March 2006 to gain input from hunters about zone boundaries for the 2006-2010 seasons. The purpose of the workshops is to share information used to develop hunting season recommendations and an opportunity for hunters to provide their views about zoning and split seasons during the 2006-2010 seasons.

Workshop Agenda includes the following:

1) 7:00 pm - Introduction and purpose of the workshops
2) 7:10 pm - Presentations to include a review of information used to develop waterfowl season recommendations, including season dates and zone boundaries
3) 7:45 – Small group breakouts. Small groups will be asked to provide a consensus recommendation for season dates and zones for a particular area they hunt most. Each small group will be asked to:
   - Select a group leader who will report results
   - Select a recorder to compile the individual surveys and to record the group recommendation
   - Review information sources for making a decision about season dates and zone boundary location
   - Develop a consensus recommendation about 2006-2010 zone boundaries, split seasons and season dates.
4) 8:30 - Group leaders report their recommendation to workshop attendees.
5) Questions and discussion as time allows.

Report prepared by Andrew Raedeke, David Graber, Margie Mitchell, and Lisa Oliver, Resource Science Division, Missouri Department of Conservation, Resource Science Center, Columbia, MO 65201.

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Duck Season Zones and Season Dates in Missouri

Prior to 1976, duck zones were not an option and season dates were the same for all hunters throughout Missouri regardless of the location or habitat hunted. Season lengths of 30, 45, or 50 days made it particularly challenging to accommodate widely divergent preferences and hunting styles with a statewide season. A split season was first implemented in 1976 when a nine day segment followed an October 26 through December 5 statewide season. The split was designed to provide late season opportunity (Dec. 26-Jan 3) that had not been available during most years. During 1977-79, two zones were employed, with seasons in the North Zone timed about three weeks earlier than South Zone seasons (Figure 1). Two zones with a split season (2 segments) first became an option and were in place during 1980-1985. During 1980-82, a 5-day early segment in the North Zone and a 5-day late split in the South complemented a statewide season of 45 days. An early segment of 3-5 days was retained in the North Zone during 1983-85 (40 to 50-day seasons), while the late segment in the South Zone was expanded to 10-18 days. North Zone seasons during 1986-90 were 30-40 consecutive days, while South Zone seasons included an early segment of 16-23 days and a late segment of 13-17 days. Beginning in 1991, Missouri was divided into North, South, and Middle zones and based upon hunter input; the three zone structure has remained in place since. The North/Middle Zone boundary (I-70 to highway 47) was adjusted during 2001-2005 to include portions of Lincoln, Warren, and St. Charles counties in the Middle Zone and the Middle/South Zone boundary was modified to include Barton, northern Jasper and southern Vernon counties in the South Zone.

Preferences for season timing among Missouri duck hunters varies as widely as the habitats they hunt, the species they pursue, and the many hunting styles employed during a given season. Early season habitats include shallow marshes, creeks, ponds and green tree reservoirs. Late season habitats include rivers and reservoirs, except in the south where freeze-up is less predictable and a wider range of habitats are available throughout much of the season. Among years, hunting opportunity and hunter success are dependent on the weather. Summer weather patterns determine wetland status and food conditions going into fall. Growing season floods can negatively impact wetland food production as can drought. Fall weather patterns affect migration timing, food availability and the length of time ducks remain in Missouri. Cold weather brings an end to the season for many hunters, and for others it is just the beginning. Concerns about duck season dates have been a long-standing source of contention among duck hunters who hunt different regions of the state, for different species, and in different habitats.

Following annual proposals from states for zone boundary changes, the U.S. Fish and Wildlife Service developed criteria to limit options for split seasons and zones, and to limit the frequency of change to 5-year intervals. Since 1991, states have been required to select one of the following options; 1) a statewide season with no zones or splits, 2) a statewide season split into 3 segments, 3) a statewide season split into 2 segments, 4) two zones with a split season in either or both zones, or 5) three zones with continuous seasons in each zone. The three-zone option was selected by Missouri in 1991, and because it has been supported by a majority of hunters, it has been retained. The same options will be available for the 2006-2010 waterfowl seasons. Information sources for developing recommendations for the 2006-2010 period will include long-term data from harvest, banding, populations, weather, and hunter preferences. Hunter preference information will include survey results, along with results of zoning workshops.

Given the range of hunter preferences that exist, it is likely that not all hunters will be completely satisfied regardless of which season dates or zone boundaries that are selected. The challenge is to provide a balance that will accommodate at least a portion of most hunters' desires.

Considerations for developing the zone boundary recommendations for the next five year period are as follows:

1. Current duck season harvest strategy includes options for 30, 45, and 60 day seasons. We have experienced nearly unprecedented opportunity with 60 day seasons since 1997. There is no guarantee that this will continue and potential season lengths of 30 and 45 days are possibilities that must be considered over the next five years as changes in zone boundaries or season structure are recommended.

2. Season dates will be recommended to accommodate a range of hunting styles and preferences. Dates that completely favor one group will likely disenfranchise another, and may not accommodate the range of hunting styles throughout a region.

3. Although season dates will continue to be based primarily on timing for mallards, season timing for other species will also be considered. Mallards are preferred by most Missouri hunters and account for 50% or more of the duck harvest. However, other ducks comprise about 80% of the fall flight and should be considered as season dates and zone boundaries are developed.

4. In recent years, the latest season dates in modern history have been recommended for Missouri. Later dates have been in response to hunters desiring later season hunting opportunity. This may be at least partially weather related as Missouri hunters have experienced above average temperatures in Missouri during recent winters. Above average temperatures may or may not be the rule for the next five year period.

5. Duck Zone boundaries should be based upon the preferred season dates for hunters and habitats throughout a region. Boundaries should not be designed to accommodate a particular area or ownership, whether it is public or private.

6. The purpose of duck zones is to provide the “best” season dates for a particular region, not to extend the season for hunters who travel from zone to zone to extend their hunting season.

7. Whether or not changes are recommended for 2006-2010 will depend primarily upon hunters input. If most hunters from a particular region prefer a different season structure (zones and splits) or season dates, a change will likely be recommended. Otherwise, “change for the sake of change” will not be recommended. Regardless, the time and effort taken by hunters to provide their input is valued, and it will help us develop the best possible recommendation for Missouri duck hunters.

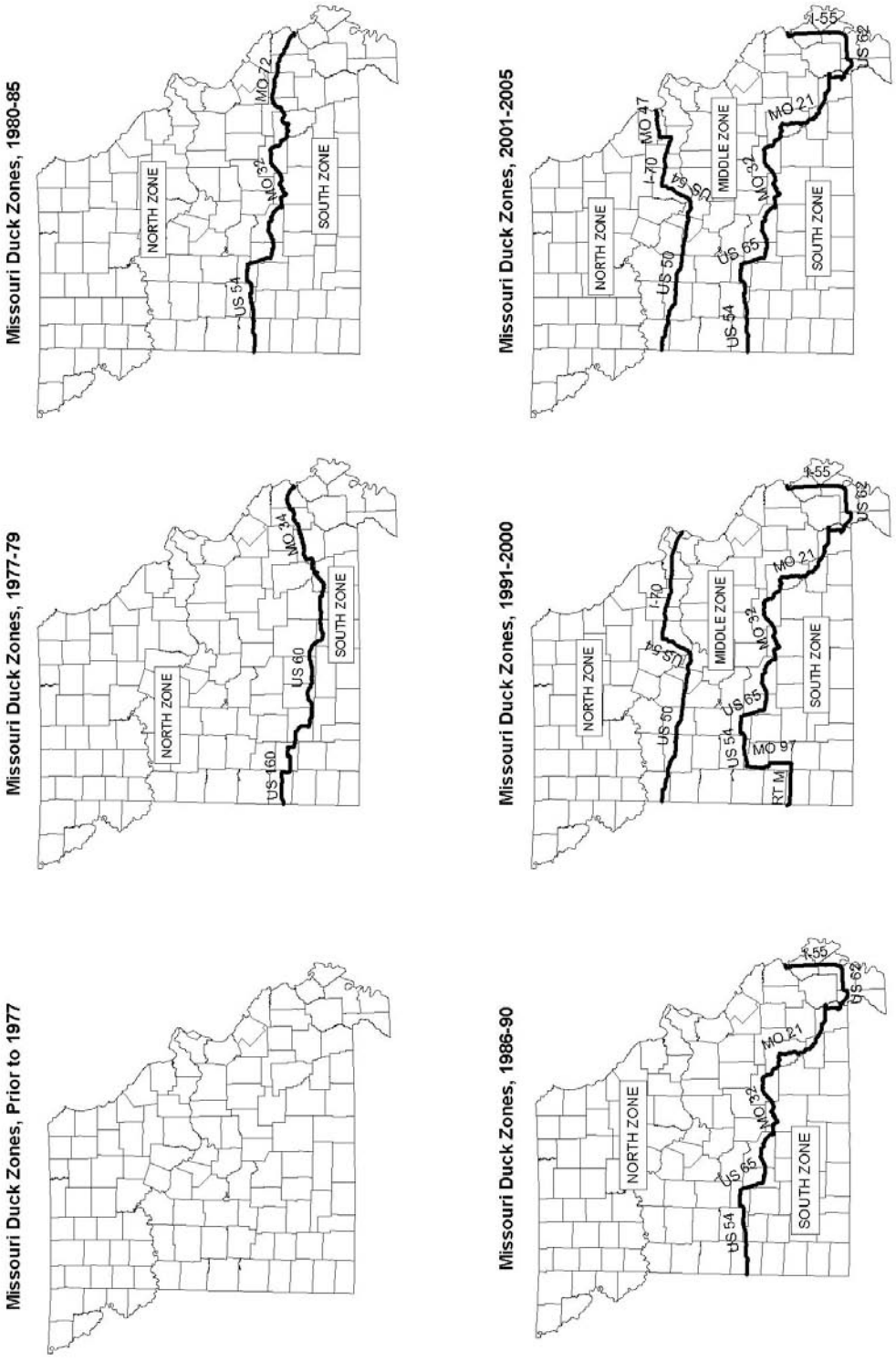

Figure 1. Zone and split season configurations in Missouri.

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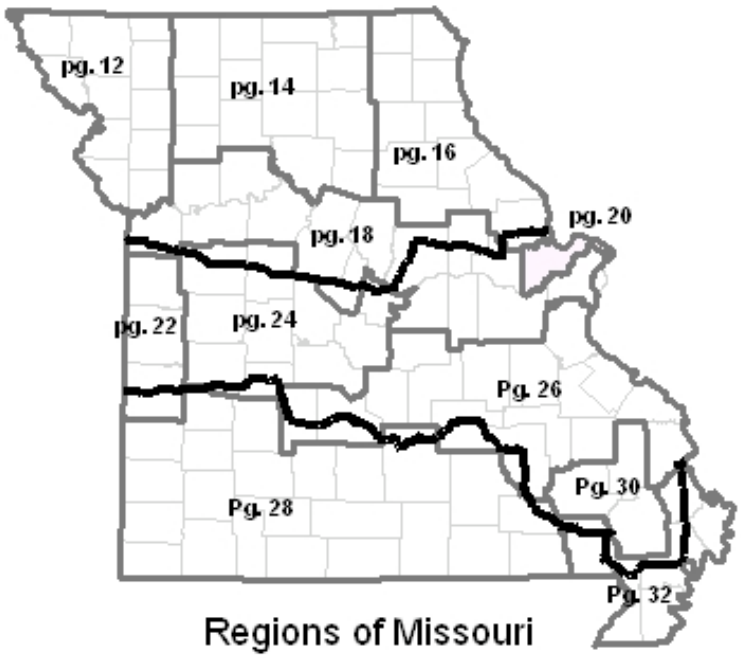
Duck Season Data for Missouri

Considerable information is used each year when duck season dates are recommended for Missouri. Pages 7-9 provides statewide fall and winter weather trends from 1895 to 2005. Season dates from 1962-2005 are presented on page 10. Regional weather, waterfowl population, and harvest data for 11 regions begin on page 11. Hunter opinion data about season dates and zone boundaries for 23 regions begin on page 34.

Weather information was provided by the Missouri Climate Center. Data were from weather stations that correspond to the 11 primary areas of Missouri. It includes the dates when there is a 10, 20, 30, 40, 50, 60, 70, 80, and 90 percent chance of the temperature reaching down to 24° Fahrenheit and 16° Fahrenheit based on weather records from 1971 - 2000. For example, in Northwest Missouri there is a 90% chance that the temperature will fall below 24° by November 29 and below16° by December 16.

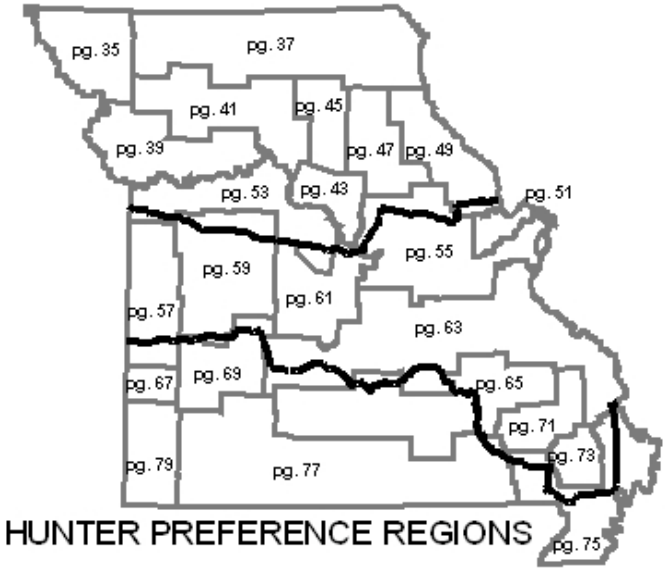
Population data indicate when ducks move through the various regions of Missouri. Comparisons between the 30-year and 5-year average are provided to illustrate how recent experiences compare to long-term trends. Information about early-migrant ducks (teal, wigeon, pintails, etc.) and mallards are included to reflect differences in migration timing among these species.

Harvest information from the U.S. Fish and Wildlife Service's (FWS) post-season harvest survey from 1997-2004 provides clues about the timing of harvest in each region of Missouri during the period when 60-day seasons have been in place. Band recoveries from this period also illustrate the distribution of harvest. Missouri Department of Conservation wetland area managers record the number of hunters and their harvest each day. These data demonstrate changes in hunter effort and harvest in shallow water habitat. Harvest from Department of Conservation Areas typically account for about 16% of the statewide harvest.



Regions of Missouri

Hunter preference data are from post-season harvest surveys conducted annually and from a more detailed survey conducted after the 2004 season that included more specific questions about hunter zone boundary and season date preferences. Data from the 2004 survey show hunter preferences for season dates and zone boundaries as well as their satisfaction with season dates and zone boundaries. Post-season harvest survey results from 1997-2004 reveal how hunters responded to a question asking which week they most prefer to hunt ducks.



Details about Data Sources and Limitations

Weather: The Missouri Climate Center is a section of the Atmospheric Science program of the Department of Soil and Atmospheric Sciences, University of Missouri-Columbia. The center is an integrated unit of atmospheric and climate research and service in the University's College of Agriculture, Food and Natural Resources. Dr. Patrick Guinan, climatologist provided weather data and sources for locating additional information.

Population: These data are the result of at least biweekly surveys on state and federal wetland areas. The data are reported as the percent of the fall/winter duck use that occurred by week. For some areas that have been acquired or developed more recently (e.g., Otter Slough CA or Ten Mile Pond CA), the population data may be less than the 30 years usually available. In other instances (e.g., South Missouri), no managed state or federal wetland exists in the region; here, the most proximate and appropriate site is used (e.g., Montrose CA was used to reflect populations for the South Missouri Region).

Harvest: Each year the FWS conducts a mail survey and also asks a sample of hunters to submit a wing from each duck harvested. These data are used to estimate harvest. Although the sample sizes for particular regions can be small and result in imprecise estimates, we have combined data from 1997-2004 to provide clues about the distribution of harvest across regions and through the fall. These estimates are more precise in areas with larger sample sizes. These data are summarized so each month consists of 4 periods of approximately 8 days each. To account for differences in the number of days in a week when a season is open, the daily average per week is reported. For example, the 4th period in October may only have 1 or 2 days if the season does not open until the last weekend in October. We then calculated the percent each week contributed to the yearly total and then took the average percent across years. Band recovery data

provide another source of information on duck harvest distribution by location and date. These data are summarized in a similar fashion as the harvest data and are presented as the percent the daily average per week contributes to the yearly total. Area harvest and hunter effort data were also summarized into periods of approximately 8 days. Unlike the other population and harvest data, these data are organized by week of the season and not date. In some instances, the analysis may exclude Conservation Areas when data were not available. In regions that do not have a Conservation Area, data from the most proximate site are used.

Hunter Preference: Each year approximately 5,500 migratory bird hunters are sent a short survey to determine hunting activity, harvest, the week hunters most prefer to hunt, and their hunter satisfaction. In 2004, a much more in-depth survey was sent to 10,000 migratory bird hunters to assess hunter regulatory preferences and opinions about waterfowl management. The level of precision of the responses is low when broken down into small units. However, analysis of hunter preference data between years reveals consistency even in the regions with a relatively low number of responses. In this report, charts are included even when the sample sizes are low.

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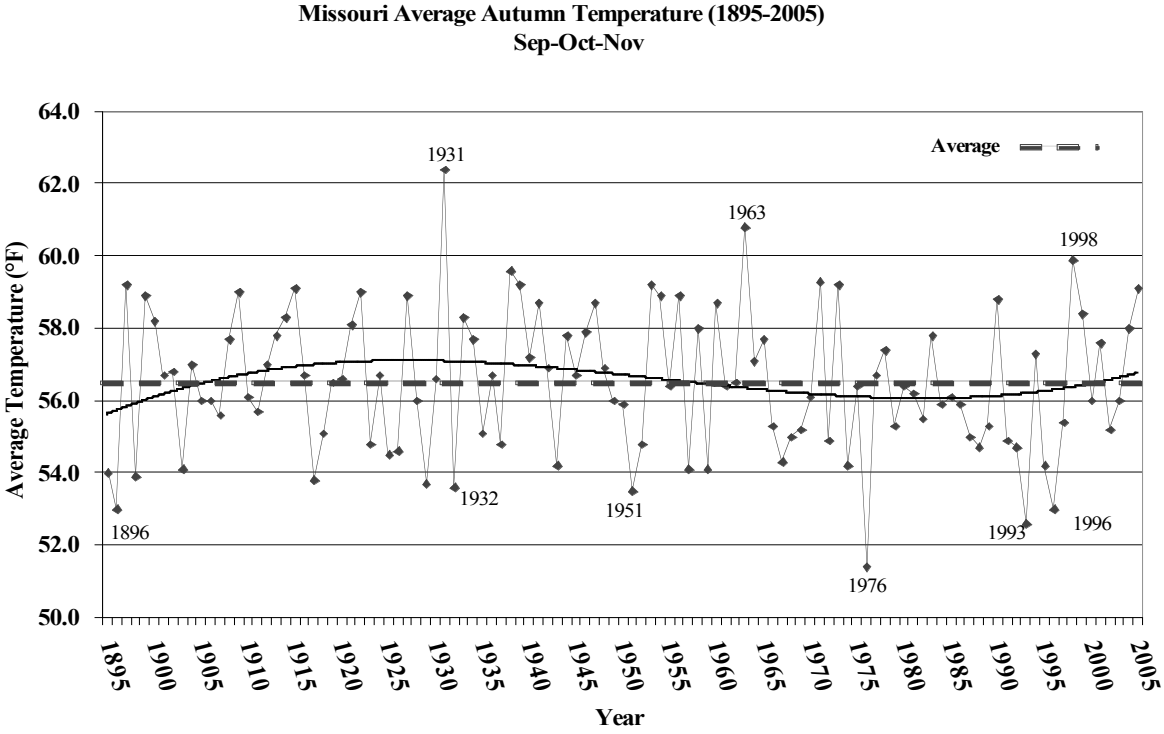
Fall and Winter Temperature trends in Missouri during 1895 -2005.

Temperatures vary annually in Missouri, and dramatic differences may occur from year to year. Autumn temperatures were well above average (solid trend line) during the 1930s but were generally below the long-term average (dotted line on chart below) from the mid-1970s to the early to mid-1990s and have returned to near average during the mid to late 1990s and early 2000s.



The trend (solid dark line) in winter temperatures has varied over the past 100+ years from average (dashed line). Temperatures were well below average during the late 1800s and early 1900s and above average during the 1930s. Following record cold during the winter of 1978-79, winter temperatures warmed to well above average during the 1990s and into the 2000s. Variability remains, however, as 2000/2001 was much colder than average and 2001/2002 was much warmer than average.

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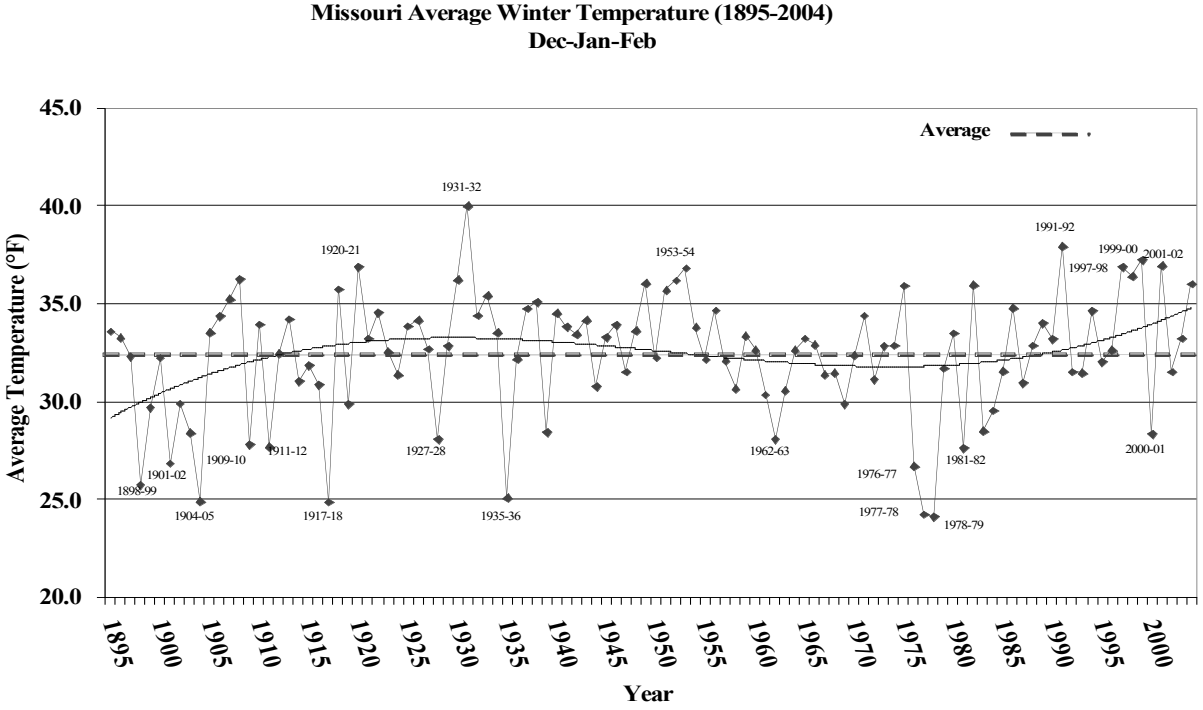

A temperature that causes "freeze-up" cannot be specifically defined. Size of the water body, water depth, vegetation, wind protection, flowing water, etc. all have a bearing on whether or not a particular body of water freezes over at a certain temperature. Regardless, we selected a daily low temperature of 24° F and 16° F to represent the relative risk of freeze-up to hunters in various habitats. A low temperature of 24° was selected to indicate initial ice formation on shallow water areas. A low temperature of 24° is also likely to ensure that mallards have arrived in reasonable numbers. A low temperature of 16 ° was selected to represent the risk of more severe ice conditions. Using these temperatures, the probability of Freeze-up occurs earlier in Northwest Missouri and later in the Bootheel of Missouri. Mid-latitude areas are more variable, but the trend of colder temperatures from northwest to southeast is still apparent.

A 50% probability of reaching 24° F by mid-November, and a 90% probability of reaching 24° F by late November or early December, appears to be likely for much of the state. A 50% probability of reaching 16° F by early December, and a 90% chance of reaching 16° F by mid to late December also seems likely for most mid-state areas. A 90% probability of reaching 16° F in the South, and Southeast regions does not occur until January.

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Probability (50% and 90%) that a low temperature will be reached, by date at locations (weather stations) in Missouri.

	Temperature		Temperature	
Location	**24°**	**24°**	**16°**	**16°**
Probability	**50%**	**90%**	**50%**	**90%**
Northwest	7-Nov	29-Nov	1-Dec	16-Dec
North-Central	12-Nov	26-Nov	28-Nov	18-Dec
Northeast	19-Nov	5-Dec	6-Dec	24-Dec
St. Charles	12-Nov	2-Dec	4-Dec	22-Dec
Central	12-Nov	28-Nov	2-Dec	22-Dec
Central Reservoirs	15-Nov	5-Dec	5-Dec	25-Dec
West-Central	14-Nov	30-Nov	3-Dec	23-Dec
South	16-Nov	7-Dec	9-Dec	2-Jan
East Central	18-Nov	8-Dec	14-Dec	6-Jan
Southeast	15-Nov	7-Dec	13-Dec	13-Jan
Bootheel	27-Nov	16-Dec	22-Dec	25-Jan

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Season dates and bag limits from 1960 through 2005.

Season	Days	Bag & Possession	Statewide	North Zone	Middle Zone	South Zone
1962	25	2	11/2-11/26			
1963	35	4	10/25-11/28			
1964	40	4	10/30-12/8			
1965	40	4	10/29-12/7			
1966	45	4	11/1-12/15			
1967	40	4	11/1-12/10			
1968	30	3	11/1-11/30			
1969	30	4	11/1-11/30			
1970	55	6	10/24-12/17			
1971	50	4	10/31-12/19			
1972	50	4	10/29-12/17			
1973	45	7	11/1-12/15			
1974	50	7	10/30-12/18			
1975	50	7	10/29-12/17			
1976	50	10	10/26-12/5 & 12/26-1/3			
1977	45	10		10/25-12/8		11/15-12/29
1978	50	10		10/24-12/12		11/14-1/2
1979	50	10		10/24-12/12		11/14-1/2
1980	50	10		10/18-10/22 & 11/1-12/15		11/1-12/15 &12/26-12/30
1981	50	10		10/17-10/21 & 10/31-12/14		10/31-12/14 & 12/26-12/30
1982	50	10		10/16-10/20 & 10/30-12/13		10/30-12/13 & 1/8-1/12
1983	50	10		10/15-10/19 & 11/1-12/15		11/1-12/4 & 12/17-1/1
1984	50	10		10/20-24 & 11/1-12/15		11/1-12/2 & 12/15-1/1
1985	40	5		10/19-10/21 & 11/2-12/8		11/2-12/1 & 12/27-1/5
1986	40	5		11/1-12/10		11/22-12/14 & 12/27-1/12
1987	40	5		10/31-12/9		11/21-12/13 & 12/26-1/11
1988	30	3		11/5-12/4		11/19-12/4 & 12/26-1/8
1989	30	3		11/4-12/3		11/18-12/4 & 12/26-1/7
1990	30	3		11/3-12/2		11/17-12/4 & 12/26-1/6
1991	30	3		11/2-12/1	11/9-12/8	11/30-12/29
1992	30	3		10/31-11/29	11/7-12/6	11/28-12/27
1993	30	3		10/30-11/28	11/6-12/5	11/27-12/26
1994	40	3		10/29-12/7	11/5-12/14	11/25-1/3
1995	50	5		10/28-12/16	11/4-12/23	11/22-1/10
1996	50	5		10/26-12/14	11/2-12/21	11/23-1/11
1997	60	6		10/23-12/21	10/30-12/28	11/13-1/11
1998	60	6		10/22-12/20	10/29-12/27	11/12-1/10
1999	60	6		10/23-12/21	10/30-12/28	11/13-1/11
2000	60	6		10/26-12/24	11/2-12/31	11/16-1/14
2001	60	6		10/27-12/25	11/3-1/1	11/22-1/20
2002	60	6		10/26-12/24	11/2-12/31	11/23-1/21
2003	60	6		10/25-12/23	11/1-12/30	11/22-1/20
2004	60	6		10/30-12/28	11/6-1/4	11/26-1/24
2005	60	6		10/29-12/27	11/5-1/3	11/25-1/23

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